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**AGS PROTEINS AND NUCLEIC ACID MOLECULES  
AND USES THEREFOR**  
**Abstract of the Disclosure**

A screening assay in yeast is disclosed wherein G-protein coupled-

10 receptor independent activators and inhibitors of the pheromone pathway can be identified using a mammalian cDNA library. Novel Activator of G protein Signaling ("AGS") proteins, which are Ras-related proteins that stimulate G protein activity in a receptor-independent manner, are disclosed, as well as nucleic acid molecules encoding AGS proteins. In addition to isolated AGS proteins, the invention further provides

15 isolated AGS fusion proteins, antigenic peptides and anti-AGS antibodies. The invention also provides isolated AGS nucleic acid molecules, recombinant expression vectors containing a nucleic acid molecule of the invention, host cells into which the expression vectors have been introduced and non-human transgenic animals in which an AGS gene has been introduced or disrupted. Diagnostic, screening and therapeutic

20 methods utilizing compositions of the invention are also provided.

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